

# HERPETOLOGICAL MISCELLANEA

By L. GLAUERT, Western Australian Museum, Perth.

## XI.—DRAGON LIZARDS OF THE GENUS *AMPHIBOLURUS*

These dragon-like lizards have a short, blunt head, small eyes with round pupils and moveable lids. The body is more or less normal and the tail long and tapering; the limbs which are pentadactyl are long, the hind foot often being as long as the fore limb. Some species even adopt a bipedal gait in times of emergency. There are both preanal and femoral pores, at least in the males. Many of these lizards are active in the day time.

### KEY TO THE SPECIES

- A. The adpressed hind limb reaches beyond the eye.
- a. Ventral scales keeled.
    - b. Nuchal crest absent, variegated greyish with white longitudinal stripes ..... *maculatus*
    - bb. Nuchal crest present.
      - Nostril on the canthus rostralis, brown with two or three black lines and white cross bands ..... *imbricatus*
  - aa. Ventral scales smooth or feebly keeled.
    - e. Canthus rostralis swollen.
      - d. Nostril tubular, dorso-lateral fold smooth, faint nuchal and dorsal crests ..... *ornatus\**
      - dd. Low nuchal crest dorsal reduced to a row of scales, no dorso-lateral fold, tail with narrow black rings ..... *caudicinctus\**
    - cc. Canthus rostralis sub-angular, prominent nuchal and dorsal crests, dorso-lateral fold spinose ..... *cristatus*
    - ccc. No dorsal crest, dorso-lateral fold not spinose ..... *scutulatus*
- B. The adpressed hind limb does not reach beyond the eye.
- a. Preanal and femoral pores 20 or more extending two-thirds or all along the thigh.
    - b. Ventral scales smooth.
      - e. Dorsal and lateral scales uniform ..... *pictus*
      - cc. Dorsal and lateral scales heterogeneous ... *reticulatus* and *darlingtoni*
    - bb. Ventral scales keeled.
      - Gular scales keeled or smooth, outer series of scales near the base of the tail projecting ..... *adelaidensis*
  - aa. Preanal and femoral pores 22 or less, on the proximal part of the thighs only.
    - d. Adpressed hind limb reaches the ear or the eye, small vertebral ridge ..... *muricatus*

\* At times the adpressed hind limb does not extend beyond the eye.

♂♂. Adpressed hind limb reaches the axilla  
or the shoulder.

e. Scales on the body large ..... *barbatus minor*

ee. Scales on the body small

..... *barbatus microlepidotus*

### *Amphibohurus maculatus* (Gray)

#### Spotted Dragon

A rather small lizard, less than 8 in. (200 mm.) in length, with the nostril below the canthus rostralis; head scales strongly keeled smallest over the eyes. Body covered with small uniform strongly keeled scales, the keels converging to the vertebral line and smallest at the sides. Gular scales keeled, smaller than the keeled ventrals. Limbs very long, the adpressed hind limb reaching beyond the tip of the snout, covered like the tail with keeled scales larger than the dorsals. Males with 50 or more pores in a complete series arched in front of the vent.

The coloration is very variable; preserved specimens are grey above with a white dorso-lateral band extending from neck to the tail and dividing regular series of transverse black spots which may be sufficiently abundant to form longitudinal stripes continuing on to the tail. Outside this a white streak bounded externally by a dark streak reaching from the axilla on to the tail. In addition to the dark lateral streak some of the tails have light brown ill-defined cross bars on the upper surface. The legs are roughly banded with darker above, and the lower surface whitish with the characteristic black V on the chin and the cross bar on the chest. Females lack the white streaks and have their lower surface immaculate.

**Distribution:** Known from Barrow, Lowendall and Bernier Islands in the north to the south coast, Ravensthorpe and inland to the Wheat Belt.

### *Amphibohurus maculatus gularis* Sternf.

#### Sternfeld's Dragon

This lizard is very similar to its nearest relative, the main difference being the larger tympanum and the coloration. The latter which is rather variable has been described as follows from living specimens. "The male is bright brick red to dull reddish brown above with rounded black spots and yellow greyish ocelli, the latter, which are bordered by a narrow black line, are more or less confluent into longitudinal bands on each side of the body, converge on the nape and extend along the tail; a broad black band extends from the tip of the snout through the eye, above the fore limbs along the body and the front of the hind limb to the knee, a pale yellow line divides the black band from the axilla to the groin. The light markings on the head, the lips and the under surface yellowish white. A large jet black patch covers nearly the whole of the throat, chest and fore part of the abdomen and fore limbs." The females are coloured like the males but lack the black markings on the sides and ventral surfaces, the throat may be mottled or speckled with grey.

**Distribution:** As indicated by specimens in the Museum the species ranges from La Grange, Wallal and De Grey Stations in the north, and the Canning Stock Route to Kathleen Valley, north of Leonora.

*Amphibolurus imbricatus* Peters  
Peters' Dragon

This little lizard, it rarely attains a length of 6 in. (150 mm.), can readily be recognised by the following characters, (1) nostril is situated on the sharp canthus rostralis, (2) the small uniform keeled scales of the back gradually increase in size towards the tail, (3) and the row of enlarged keeled scales along the vertebral line from the nape to the tail.

The scales on the snout are keeled, on the rest of the head more granular; dorsal scales keeled, gulars and ventrals less strongly so; those on the limbs and tail similar to the dorsals but larger, their keel forming distinct rows along the limb, ventrals larger than the dorsals, feebly keeled. Limbs long, the adpressed hind limb reaching beyond the tip of the snout, tail more than twice the length of the head and body. About 22 preanal and femoral pores in the male.

The colour in life is said to be variable, ranging from brownish grey to brick red with black spots along the neck and body, white spots may be present and even coalesce to form transverse bands; the tail is brown with narrow white crossbands. These colours are soon lost when the specimen is preserved in spirits or formalin.

**Distribution:** Specimens in the Museum collection are from De Grey Station and Hooley Station in the north to Laverton in the Eastern Goldfields.

*Amphibolurus ornatus* (Gray)  
Ornate Dragon

A rather large species growing to about 10 in. (255 mm.) with the adpressed hind limb of the male reaching to the eye or slightly beyond; head short, canthus rostralis rounded, nostril distinctly tubular, upper head scales tubercular, rough, smallest over the eyes. Body covered with small keeled scales, largest on the vertebral line, smallest at the sides where they are intermixed with a few scattered larger ones; a low nuchal crest; ventral scales, small, smooth; scales on the limbs much enlarged strongly keeled above. There are 60 or more pores in the males, females without pores. Caudal scales all round larger than the dorsals, strongly keeled. Tail about twice as long as the head and body.

The coloration is variable but consists mainly of black and yellow. The head is covered with symmetrical markings of black and the dorsal surface of the body black with a broad yellow vertebral band on which are situated a row of yellow black edged lozenges which may be replaced by black patches or irregular cross bands. Adjacent to this is a brownish dorso-lateral area which like the black sides of the body bears a number of small yellow spots. The limbs are yellow with black cross bands and the tail yellow with jet back rings. The normal and melanie specimens are illustrated.





Ornate Dragon (specimen from Jacup, September 1957).



Ornate Dragon—melanic form (specimen from Yoting, October 1956).

—Photos E. Lindgren.

**Distribution:** The species has a very wide range in W.A. throughout the South-West, as far north as Mt. Magnet and Lake Barlee. It occurs on the Archipelago of the Recherche and there is a single specimen in the collection from Bernier Island.

*Amphibolurus caudicinctus* (Gnthr.)

Ring-tailed Dragon

A moderate species growing to about 10 in. (255 mm.) with the adpressed hind leg reaching the eye in the male; head short and heavy, cheeks swollen, nostril below the swollen canthus rostralis its opening slightly upwards. Head scales tubercular, keeled, smaller over the eyes and on the temporal region, a few small spines behind the ear. A low nuchal crest continuing as a ridge along the body and tail. Body covered with small keeled scales, the keels gradually converging to the middle line, increasing in size towards the tail, smallest at the sides. Gular scales small smooth, ventrals smooth, as large as the dorsals. Tail slightly compressed about twice the length of the head and body, covered with keeled scales not much larger than the posterior dorsals. Limbs above covered with strongly keeled enlarged scales. About 36 pores in the male.

The coloration is variable. The head may range from light-ochraceous-buff to ochraceous tawny after the dust of the soil in which the lizard has been burrowing. The back may be almost uniform pale brown or range from pale brown to cinnamon brown with narrow irregular cross bands of dark brown, legs faintly banded with darker or uniform and the tail light with narrow blackish rings. The under surface is pale yellow with dark marbling on the chin and a black patch on the chest of the males extending on to the fore limbs. The young are brighter coloured than the adults.

**Distribution:** The type locality is Nicol Bay, specimens in the Museum are from stations in that area. The Harvard Expedition obtained specimens from Meekatharra, Wiluna and Hermannsburg, Central Australia.

*Amphibolurus cristatus* (Gray)

Crested Dragon

Habit slender, head fairly large with angular canthus rostralis, tympanum almost as large as the orbit, upper head scales subequal, rugose, strongly keeled, smallest over the eyes; a row of triangular spines from under the eye to over the tympanum, a few on the folds on the side of the neck. Body covered above with small keeled scales, largest at the middle of the back with scattered larger ones. Nuchal crest prominent passing into a dorsal crest which extends backwards almost to the end of the tail, dorso-lateral fold with a crest or serrated ridge. Gular scales smaller than the ventrals, very feebly keeled. Ventrals small, smooth or very feebly keeled. Limbs long, the adpressed hind limb reaches to beyond the tip of the snout, covered with small keeled scales. Tail about twice as long as the head and body covered with keeled scales larger than those on the body. There are 50 preanal and femoral pores. Grows to about 12 in. (300 mm.). The colour is not uniform, a specimen may have the

head with a few dark markings, the fore part of the back olive with dark markings or reticulations and the rest of the back and the base of the tail as well as the limbs above dark olive brown, but the distal portion of the tail distinctly ringed with lighter and darker. Under surface black, hands and feet pale, as also is the basal part of the tail. The pale pores are very distinct.

**Distribution:** The southern part of the State from the Darling Range eastward. There is a single specimen from Learmonth in the north and Fitzgerald Peaks in the south. Most of the specimens are from the Goldfields. It is recorded from Bernier Island.

### *Amphibolurus scutulatus* Stirling and Zietz Lozenge-marked Dragon

Habit slender, in general shape closely resembling *A. ornatus* (Gray) but differing markedly in coloration, and the scales smaller throughout. The head is somewhat narrower, the tympanum larger, the head scales smooth not rugose and mostly bi- or tricarinate. The dorsal surface is covered with small sub-equal keeled scales not intermixed with larger ones. Finally the coloration is markedly different, dark lozenge shaped markings being prominent on both males and females, making the animals conspicuous in collections but probably having a great survival value in its natural environment. A single median series of large dark spots on the neck and fore part of the body soon breaks up into a double row of lozenge-shaped spots extending on to the tail; below these another row, light edged and often containing a variegated centre, can be traced on to the tail. The limbs and tail are also distinctly marked with light edged dark patches and more or less distinct pale cross bands.

The lizard may grow to 17 in. (420 mm.), the head and body 120 mm. and the tail 300 mm. From 40 to 60 pores along the thighs.

**Distribution:** Almost identical with *A. cristatus*. Specimens in the collection are from the Lyndon River in the north to the Kalgoorlie area in the south. It is known from many parts of the Murchison and Eastern Goldfields.

### *Amphibolurus pictus* (Peters) Painted Dragon

This little lizard, its greatest recorded length is under 9½ in. (240 mm.), is one of the short-legged group, its hind legs when adpressed not reaching beyond the eye. The body is covered with small smooth or feebly keeled scales both above and below but those on the limbs and tail are more strongly keeled. Throughout the scales are almost uniform in size, enlarged scales and tubercles being absent. There are from 32 to 44 pores in the male extending the whole length of the thigh.

The bright breeding season colours have been described by Lucas and Frost. "Male, brick red above, with faint black reticulations enclosing yellow spots on the back and sides. Head pinkish grey with lighter and darker markings. A broad leaden-blue vertebral stripe barred with numerous narrow black bands and a few



broader light ones. Tail leaden-blue with narrow irregular light bands. Under surface yellowish white. Dark marks on the throat and chest." Females are less ornate, being rusty brown above with faint dark reticulations enclosing light spots on the sides; a vertebral series of short black bars; a few light bands across the back at intervals. Tall rusty-brown with light narrow cross bands; under surface whitish. Specimens in spirits lose the bright colours but the details can be distinguished some time after death.

**Distribution:** Appears to be very wide in the interior. In addition to occurring in South and central Australia it has been collected at Well 37 on the Canning Stock Route, Kurrawang and between Israelite Bay and Cape Arid.

### *Amphibolurus reticulatus* (Gray)

#### Netted Dragon

A rather stout lizard growing to 10 in. (250 mm.) or so with the adpressed hind limb not reaching the orbit. Head short and heavy, nostril on a rounded canthus rostralis, directed upwards. Scales on the head tubercular, obtusely keeled, smallest over the eyes, short spines at the back of the head and on the folds of the neck variable in development. A low nuchal crest, dorsal crest represented by a row of enlarged keeled scales; enlarged smooth or faintly keeled scales intermixed with the smaller smooth ones of the dorsal and lateral surfaces, at times in more or less regular cross bands, at others merely scattered over the surface; they may be represented by tubercular scales of various sizes. Gular scales smooth, smaller than the smooth ventrals. Scales on the tail and limbs larger than the dorsals, strongly keeled. Tail about once and one-half as long as the head and body.

In this species females as well as males may have spores though less numerous, arranged along the whole length of the thigh when adult. The number of pores varied considerably in a series of 46 specimens from Wallal. The great majority are immature with the pores either absent or partly developed. Of six adults, one has 16, two 18 and 20 and another 24, thus agreeing with Sternfeld's *Amphibolurus reticulatus major*. This type appears to range as far south as the Murchison Railway. To the south of this and to the north also in places we meet the typical form which may have as many as 50 pores in the male. In both types the pores extend along the whole length of the thigh. The coloration of the species also shows considerable variation as well as sexual differences. In the adult male the head is covered with darker and lighter symmetrical markings often obscured by the dust of the soil in which the lizard has been burrowing. There is a pale vertebral band about a scale wide and the rest of the back and sides are covered with a dark network enclosing pale yellow spots; the tail is plain or has faint dark cross bands which become stronger towards the tip. The limbs have dark and light markings and the under surface is pale yellow with dark markings on the chin. The females have faint reticulations laterally but whilst the pale vertebral stripe may be present, the main pattern on the back consists of a number of dark patches

arranged in pairs on each side of the vertebral line. The markings of the young and immature are so varied that they cannot be used as a means of identification. Excellent reproductions are given by Werner in *Fauna Sudwest-Australiens*, vol. 2, plate 14. Photographs of both sexes are included in an article on the species by S. R. White in *W.A. Nat.*, 1 (8), 1949: 157.

**Distribution:** Almost state-wide. It is known from the far north but does not appear to reach the west coast south of Geraldton, and is not recorded south of Ongerup.

### *Amphibolurus darlingtoni* Loveridge

#### Darlington's Dragon

This lizard is described by Loveridge as a member of the *reticulatus* group apparently most nearly related to *inermis* De Vis. From this it differs (1) by the absence of small isolated spines behind the tympanum, (2) by the presence of three rows of strongly enlarged spines, the first continuing in a straight line behind and from the angle of the mouth, the second along the upper border of the tympanum and continued posteriorly beyond it, the third on a fold of the skin still higher on the neck, and (3) by the presence of transverse, though somewhat irregular, rows of greatly enlarged, flat, keeled scales on the back.

A series of 46 specimens from Wallal demonstrates the extreme variability of *reticulatus*, and although no specimen has been found in this series or in the general Museum collection with all the above features united in one individual, there seems little doubt that *darlingtoni* must be regarded as a synonym of *reticulatus*.

The only specimen in the collection is a paratype, R4460, from Mullewa.

### *Amphibolurus adelaidensis pulcherrimus* Blng.

#### Beautiful Queen Adelaide's Dragon

A small lizard not reaching more than 5 in. (125 mm.) in length; its nostril well below the sharp canthus rostralis; the head covered with keeled scales, some of those on the occiput with 3 keels and small spines. A distinct dorso-lateral fold. Body covered with irregular keeled scales, some of which form a distinct vertebral series extending from the nape to the base of the tail, intermixed with small spines, gular scales smooth or feebly keeled, ventrals keeled. Limbs short, the adpressed hind limb in the male reaching the tympanum and in the female to the shoulder. Scales on the upper surface of the limbs large, strongly keeled, those on the tail likewise, but the outer series at the base taking the form of white pointed tubercles, a feature peculiar to the species.

The colour in life is pale greyish with symmetrical dark markings on the head and a regular series of five or six angular dark brown white edged spots along the back from the nape to the base of the tail, a second series may be present below the dorso-lateral fold, tail with two series of dark spots laterally; under surface pale, chin of male with two A-shaped black streaks, a black patch



on the throat and between the fore limbs continuing as a black streak along the body to the vent. Females with chin and throat marbled. The species is well figured on Plate 30 of the British Museum Catalogue of Lizards, vol. 1, 1885.

**Distribution:** Very widespread, from Point Cloates in the north to the south coast (Hamelin Bay and Esperance) and eastwards to South Australia. It is known from Bernier Island.

*Amphibolurus muricatus* (Shaw)

Tree Dragon or Bloodsucker

A large member (12½ in. (320 mm.)) of the short-legged section whose hind legs when adpressed do not reach beyond the eye. It is easily recognised by its series of keeled scales forming several prominent ridges along the dorsal surface and by its striking markings. Head covered with keeled scales, smaller over the eyes, and with short spines near the tympanum and at the back of the head. Body covered with small keeled scales and larger ones forming distinct crests along the dorsal surface from the neck to the hind limbs. Gular scales smaller than the ventrals feehly keeled, ventrals almost smooth slightly mucronate. Tail and upper sides of the limbs with rows of large, strongly keeled scales larger than the dorsals. In the male there are three or four femoral and two preanal pores on each side.

The colour is brown above with five large darker angular patches along the side of the vertebral area from the shoulder to the base of the tail hounded externally by the dorso-lateral crest or fold. Limbs with dark markings, hands and feet black. Under surface immaculate with faint dark lines on the chin. Tail with wide darker and lighter rings.

**Distribution:** An eastern species, of which the only specimen in the Museum was collected at Mt. Ragged by the late Mr. H. Tarlton Phillipps.

*Amphibolurus barbatus minor* Sternfeld

Western Jew Lizard

A large lizard of the short-legged series whose hind leg does not reach the eye when adpressed. Habit very much depressed. Head large, cheeks swollen giving the head a triangular appearance from above; nostril large below the angular canthus rostralis. Upper head scales keeled, largest on the snout, a row of spinose scales bounding the head behind. Three other series of spines can be recognised, one, the continuation of the canthus rostralis, consisting of enlarged plate-like scales and spines, extends to behind the eyes, a second passes from behind the eye over the ear, and the third starts at the angle of the mouth, passes under the ear to the neck where it sweeps round behind the transverse series. The spines near the bend and others below them form the poorly developed beard of this western form. A short row of spines is often present on each side of the neck. A distinct gular fold. Gular scales keeled, as large as the strongly keeled scales of the chest but smaller than the almost smooth posterior ventrals.

Scales on the middle of the back are large, keeled, and intermixed with numerous larger swollen ones. Scales smaller on the sides with numerous conical spines of various sizes and shapes. Limbs short, the adpressed hind limb reaching the axilla or slightly beyond, covered with large strongly keeled scales. Pores vary from 12 to 16 and are situated on the proximal portion of the thigh and the preanal region only. Tail round, slightly depressed at the base where the scalation is similar to that on the back, the rest of the tail being covered with regular strongly keeled scales. Grows to 14 in.

The coloration is variable, changing from almost uniform dark brown to buckthorn brown or ochraceous tawny; there are many specimens with lighter or darker blotches and often a regular transverse banding can be seen. In the lighter specimens a dark mark at the side of the neck is easily seen. The western form is distinguished from the eastern typical reptile by the slighter development of the spines forming the so-called "beard" and by its smaller size (see comparative photographs by S. R. White, *W.A. Nat.*, 2 (4), 1950: 95). A third subspecies *Amphibolurus barbatus minimus*, Loveridge, has been described to include still smaller specimens from the Abrolhos and the vicinity of Geraldton. A fourth form, *Amphibolurus barbatus microlepidotus* Glauert, known only from the Drysdale River area in the far north has been separated from its relatives by the smaller scales on the head and body and by the oblique arrangement of the enlarged keeled scales on the back, very few of which are spinose (*W.A. Nat.*, 3 (7), 1952: 168).

## FROM FIELD AND STUDY

**Terrestrial Activity of the Swamp Tortoise.**—On July 23, 1958, I saw a Swamp Tortoise (*Chelodina oblonga*) crossing the old Bunbury road at Coolup. The tortoise was going from a roadside puddle on the west side of the road to another on the other side. It showed a strong desire to continue east even though it was turned back several times.

W. McARTHUR, Nedlands.

**Northern Extension of Known Range of Brush Bronzewing.**—In late March, 1959, we observed three individuals of the Brush Bronzewing (*Phaps elegans*) near the mouth of the Hill River. The first bird was flushed from a track through dense *Acacia rostellifera* scrub, 3 miles north of the ford over the lower Hill. The second was at a freshwater pool, a mile upstream from the mouth of the river. The last was flushed from the road, again in *Acacia rostellifera*, 5 miles south of the ford. Only the second bird was seen in circumstances that permitted no doubt of its identity.

It is noteworthy that the habitat of these pigeons (coastal *Acacia* shrub) is similar to much of Garden Island, where the species is common (G.M.S., unpublished data).

Previously there was no record of the Brush Bronzewing on the mainland further north than Moora (60 miles to the ESE).

—G. M. STORR, Nedlands, and J. R. FORD, Attadale.